WHAT IS CLAIMED IS:

1. A scan type exposure apparatus wherein a pattern of an original is lithographically transferred to a substrate sequentially while the original and the substrate are scanningly moved relative to exposure light, said apparatus comprising:

a photodetector disposed at a position optically conjugate with the original; and

storing means for storing correction information with respect to an output of said photodetector, in relation to different positions of the original to be illuminated with the exposure light, such that, in the lithographic pattern transfer, the output of said photodetector can be corrected by use of the correction information.

2. An apparatus according to Claim 1, wherein the correction information concerns information corresponding to a light quantity of reflection light at each different positions of the original illuminated with the exposure light.

3. An exposure method, comprising the steps of:

lithographically transferring a pattern of an original sequentially to a substrate while scanningly moving the original and the substrate relative to exposure light;

correcting, in the transfer of the pattern of the original to the substrate, an output of a photodetector disposed at a position optically conjugate with the original by use of predetermined correction information corresponding to different positions of the original to be illuminated with the exposure light.

4. A method according to Claim 3, wherein the correction information concerns information corresponding to a light quantity of reflection light at each different positions of the original illuminated with the exposure light.

5. An exposure apparatus for lithographically transferring a pattern of an original onto a substrate, comprising:

a first photodetector disposed at a position optically conjugate with the original;

a second photodetector for detecting reflection light from the original; and

storing means for storing correction information with respect to an output of said first photodetector in relation to different positions of the original, on the basis of outputs of said first and second photodetectors, such that, in the lithographic pattern transfer, the output of said

first photodetector can be corrected by use of the correction information.

6. An exposure apparatus, comprising:

an illumination optical system for illuminating an original with exposure light from a light source;

a projection optical system for projecting a pattern of the original, illuminated by the illumination optical system, onto a substrate;

a photodetector disposed at a position optically conjugate with the original;

control means for controlling an output of the light source on the basis of an output of the photodetector; and

correcting means for reducing an influence of reflection light from the original, on the basis of an output of the photodetector as the original is illuminated by the illumination optical system.

7. An apparatus according to Claim 6, wherein said correcting means operates to reduce or remove the influence of the reflection light, while referring to an output of said photodetector in a state in which the original is illuminated by said illumination optical system and in which there is no reflection light coming the pattern surface of the original and

directed back to said photodetector.

8. An apparatus according to Claim 6, wherein said correcting means includes reflection light detecting means for detecting any reflection light from the original, as illuminated by said illumination optical system, and being directed back to said illumination optical system, and wherein said correcting means operates to reduce or remove the influence of the reflection light, while referring to a result of detection by said detecting means.

9. An apparatus according to Claim 6, wherein said exposure apparatus is a scan type exposure apparatus in which exposure is performed while the original and the substrate are scanningly moved relative to the illumination light from said illumination optical system and to said projection optical system, wherein said correcting means is operable to reduce or remove any influence of the reflection light at each movement positions in the scan motion, and wherein said control means is operable to control an output of said light source on the basis of an output of said photodetector, with the influence of the reflection light at each movement positions in the scan motion being reduced or removed.

10. An apparatus according to Claim 7, wherein said exposure apparatus is a scan type exposure apparatus in which exposure is performed while the original and the substrate are scanningly moved relative to the illumination light from said illumination optical system and to said projection optical system, wherein said light source comprises a discharge lamp, wherein said correcting means operates so that (i) outputs of said photodetector in relation to each movement positions are obtained beforehand while an applied electric power to said discharge lamp are kept constant and while the scan motion is performed at a speed lower than an ordinary scan speed, (ii) during the above procedure, an output of said photodetector in a state in which there is no light coming from the original and directed to said photodetector is obtained, (iii) in actual exposure of the substrate, at start of the scan motion, an output of said photodetector in a state in which there is no reflection light coming from the original and directed back to said photodetector is obtained, and (iv) at each movement positions in the scan motion, any influence of reflection light is removed or reduced on the basis of the above output and the outputs having been obtained beforehand, and wherein said control means controls, at each movement positions in the scan motion, the output of said light source on the basis

of an output of said photodetector with the influence of reflection light being removed or reduced.

11. An apparatus according to Claim 8, wherein said exposure apparatus is a scan type exposure apparatus in which exposure is performed while the original and the substrate are scanningly moved relative to the illumination light from said illumination optical system and to said projection optical system, wherein said light source comprises a discharge lamp, wherein said correcting means operates so that (i) outputs of said photodetector and outputs of said reflection light detecting means in relation to each movement positions are obtained beforehand while an applied electric power to said discharge lamp are kept constant and while the scan motion is performed at a speed lower than an ordinary scan speed, and (ii) in actual exposure of the substrate, at each movement positions in the scan motion, any influence of reflection light is removed or reduced on the basis of an output of said photodetector and a result of detection by said reflection light detecting means, and wherein said control means controls, at each movement positions in the scan motion, the output of said light source on the basis of an output of said photodetector with the influence of reflection light being removed or reduced.

12. An exposure method, comprising the steps of:

lithographically transferring, to a substrate and through a projection optical system, a pattern of an original illuminated by an illumination optical system for illuminating the original with exposure light from a light source;

controlling an output of the light source on the basis of an output of a photodetector disposed at a position optically conjugate with the original; and

reducing an influence of reflection light from the original, on the basis of an output of the photodetector as the original is illuminated by the illumination optical system.

13. A method according to Claim 12, wherein said exposure method is a scan type exposure method in which exposure is performed while the original and the substrate are scanningly moved relative to the illumination light from the illumination optical system and to the projection optical system, wherein the light source comprises a discharge lamp, wherein outputs of the photodetector in relation to each movement positions are obtained beforehand while an applied electric power to the discharge lamp are kept constant and while the scan motion is performed at a speed lower than an ordinary scan speed, wherein,

during the above procedure, an output of the photodetector in a state in which there is no light coming from the original and directed to the photodetector is obtained, wherein, in actual exposure of the substrate, at start of the scan motion, an output of the photodetector in a state in which there is no reflection light coming from the original and directed back to the photodetector is obtained, wherein, at each movement positions in the scan motion, any influence of reflection light is removed or reduced on the basis of the above output and the outputs having been obtained beforehand, and wherein, at each movement positions in the scan motion, the output of the light source is controlled on the basis of an output of said photodetector with the influence of reflection light being removed or reduced.

14. A method according to Claim 12, wherein said exposure method is a scan type exposure method in which exposure is performed while the original and the substrate are scanningly moved relative to the illumination light from the illumination optical system and to the projection optical system, wherein the light source comprises a discharge lamp, wherein outputs of the photodetector and outputs of reflection light detecting means, for detecting reflection light reflected from the original back to the illumination

optical system, are obtained beforehand in relation to each movement positions while an applied electric power to the discharge lamp are kept constant and while the scan motion is performed at a speed lower than an ordinary scan speed, and wherein, in actual exposure of the substrate, at each movement positions in the scan motion, any influence of reflection light is removed or reduced on the basis of an output of the photodetector and a result of detection by the reflection light detecting means, and wherein the output of the light source is controlled on the basis of an output of the photodetector with the influence of reflection light being removed or reduced.

15. An apparatus according to Claim 2 or 5, wherein the correction information includes information corresponding to the light quantity of reflection light from the substrate.

16. A method according to Claim 4 or 12, wherein the correction information includes information corresponding to the light quantity of reflection light from the substrate.

17. A device manufacturing method, comprising the steps of:

transferring, by exposure, a pattern of an

original onto a substrate by use of an exposure apparatus as recited in any one of Claims 1, 5 and 6; and

developing the substrate having the pattern transferred thereto.